

TESTIMONY OF CHARLES L. LINDSAY

I. Introduction

My name is Charles Lindsay. I am a Water Resource Control Engineer with the State Water Resources Control Board (State Water Board), Division of Water Rights (Division). I have seven years of experience working in the Division, which includes about six years in the Compliance and Enforcement unit and about one year in the Licensing Unit. My experience with the Compliance and Enforcement Unit includes inspecting permitted and licensed water right projects for compliance with terms and conditions and preparing administrative civil liabilities and cease and desist orders. A copy of my resume is attached as exhibit WR-2.

The revised hearing notice dated September 23, 2005, identifies three hearing issues. My testimony, herein provided, addresses the first two hearing issues and identifies my personal knowledge of the evidence and actions leading to the Division's notice of its intent to issue Cease and Desist Orders (CDO) consistent with draft CDO Nos. 262.31-16 and 262.31-17 against the United States Bureau of Reclamation (USBR) and the California Department of Water Resources (DWR), respectively. (WR-3; WR-4.) My abbreviated responses to these first two hearing issues are set forth immediately below and more detailed information follows.

Hearing Issue 1: "Should the State Water Board issue a CDO to the USBR in response to Draft CDO No. 262.31-16? If a CDO should be issued, what modifications should be made to the measures in the draft order, and what is the basis for such modifications?"

Answer: Yes, the State Water Board should issue a CDO to the USBR in response to Draft CDO No. 262.31-16. Modifications to the draft CDO are necessary to address actual violations of revised Decision 1641 that I discovered during preparation for this hearing, namely, USBR's failure to provide reports required by revised Decision 1641, page 149, term 11.

Hearing Issue 2: "Should the State Water Board issue a CDO to the DWR in response to Draft CDO No. 262.31-17? If a CDO should be issued, what modifications should be made to the measures in the draft order, and what is the basis for such modifications?"

Answer: Yes, the State Water Board should issue a CDO to the DWR in response to Draft CDO No. 262.31-17. Modifications are necessary to correct one factual statement and to address actual violations of revised Decision 1641 I discovered during preparation for this hearing. DWR's water rights do not require compliance at Vernalis (Interagency Station No. C-10), but this site was inadvertently included in

the draft CDO for DWR. To remedy this error, the reference to compliance at Interagency Station No. C-10 should be removed from the final CDO. In addition, DWR has failed to conduct monitoring and to provide reports required by Decision 1641, page 149, term 11. The final CDO should compel compliance with those monitoring and reporting requirements.

II. Draft Cease and Desist Orders

Under California Water Code Section 1831, the State Water Board may issue a CDO in response to a threatened violation of any of the terms or conditions of a permit or license. The CDO shall require the water right holder to comply immediately or in accordance with a time schedule set by the State Water Board. The purpose of draft CDO Nos. 262.31-16 and 262.31-17 is to enforce the terms of certain water rights held by USBR and DWR, which were imposed by revised Water Right Decision 1641 (dated March 15, 2000), and to establish an enforceable schedule of compliance with those terms.

A. Requirement to Meet Water Quality Objectives in the Southern Delta

The subject water rights are owned by USBR and DWR. As a condition of these water rights,¹ revised Decision 1641 requires USBR and DWR to meet water quality objectives for agricultural beneficial uses, as specified in Table 2 of the decision, at certain locations in the southern Delta. Effective April 1, 2005, Table 2 of revised Decision 1641 requires both the DWR and USBR to meet a maximum 30-day running average of mean daily EC of 0.7 millimhos per centimeter from April through August of each year at three compliance locations: (1) the San Joaquin River at Brandt Bridge (Interagency Station No. C-6); (2) Old River near Middle River (Interagency Station No. C-8); and (3) Old River at Tracy Road Bridge (Interagency Station No. P-12).² (WR-5b, Table 2.) Table 2 further specifies that after April 1, 2005, the 0.7 EC objective for Interagency Stations number C-6, C-8, and P-12 may be replaced by a 1.0 EC objective from April through August if permanent barriers are constructed, or equivalent measures are implemented, in the southern Delta and an operations plan that reasonably protects southern Delta agriculture is prepared by DWR and USBR and approved by the Executive Director of the State Water Board. (WR-5b, Table 2, note 5.)

¹ DWR holds Permits 16478, 16479, 16481, 16482, and 16483 (Applications 5630, 14443, 14445A, 17512, and 17514A, respectively). USBR holds License 1986 (Application 23) and Permits 11315, 11316, 11885, 11886, 11887, 11967, 11968, 11969, 11970, 11971, 11972, 11973, 12364, 12721, 12722, 12723, 12725, 12726, 12727, 12860, 15735, 16597, 16600, and 20245 (Applications 13370, 13371, 234, 1465, 5638, 5628, 15374, 15375, 15376, 16767, 16768, 17374, 17376, 5626, 9363, 9364, 9366, 9367, 9368, 15764, 22316, 14858A, 19304, and 14858B, respectively). (WR-5a, pp. 155-163.)

² Draft CDO No. 262.31-17 referred to DWR's compliance at Vernalis, but DWR's water rights do not require DWR to meet the salinity objective at this location. Any final CDO issued to DWR should remove the reference to compliance at Vernalis (Interagency Station No. C-10).

DWR and USBR have neither constructed the permanent barriers nor implemented equivalent measures. Accordingly, the 0.7 EC objective is in effect at Interagency Station Nos. C-6, C-8, and P-12 from April through August. If DWR or USBR exceed the water quality objectives at these stations, they must prepare a report for the Executive Director, who will then make a recommendation to the State Water Board as to whether an enforcement action is appropriate or whether the noncompliance is the result of actions beyond the control of the agencies. (WR 5a, pp. 159-163.)

B. Threatened Violation of Permit and License Terms

In correspondence and presentations to the State Water Board, DWR and USBR have acknowledged that they are likely to violate the 0.7 EC objective and they have indicated their awareness that the violation could result in enforcement action. By correspondence dated February 14, 2005, USBR and DWR submitted a joint Petition for Change and a joint Petition for Temporary Urgency Change. (WR-6.) The agencies sought to temporarily delay the implementation of the 0.7 EC standard at three locations (Interagency Station Nos. C-6, C-8, and P-12) for 180 days. They also sought to ultimately delay implementation of the objective at those locations until their estimated date of completion and operation of the permanent barriers, December 31, 2008. The State Water Board denied DWR and USBR's joint petitions for temporary urgency change by Order WRO 2005-0009.

In their cover letter accompanying the change petitions, DWR and USBR acknowledged that they were unlikely to meet the water quality objective without installing the permanent barriers, stating,

“imposition of the more stringent 0.7 EC agriculture salinity objective could force DWR and [USBR] to release large quantities of water from upstream reservoirs in an attempt to meet the 0.7 EC objective in the southern Delta. *It is unlikely that that increased flows alone will result in compliance with the objective.*” (WR-6, p. 2 [italics added].)

The agencies knew that they would be subject to enforcement if they violated the objective, adding, “[w]ithout an extension in the effective date, DWR and [USBR] could be found in violation of [] D-1641 if they exceed the 0.7 EC objective” (WR-6, p. 8.)

In a letter to the State Water Board dated March 25, 2005, DWR continued to acknowledge the threat of a violation of the 0.7 EC objective. It stated that: “Water quality often exceeds 0.7 EC in July and August in average to dry years.” (WR-7, p. 1.) Even in a wet year like 2005, DWR estimated that salinity may

exceed the required 0.7 EC objective in late summer. (WR-7, p. 2.) It acknowledged that the permanent barriers were the only feasible means of possibly achieving compliance with the objective and that the temporary barriers “cannot provide adequate water circulation benefits for water quality protection to achieve 0.7 EC under certain conditions.” (WR-7, p. 2.)

Based on this information, I concluded that there was a threat of violation of the permit and license terms requiring DWR and USBR to meet the 0.7 EC objective from April through August. Consequently, the Division issued the draft CDOs on May 3, 2005. (WR-3; WR-4.)

C. Continued Threat of Violation

DWR and USBR appear to have met the 0.7 EC objective at all three southern Delta locations this year. However, the threat of a violation at these locations continues. Based on my review of the available EC data, it is very likely that DWR and USBR will fail to meet the objective before the permanent barriers are completed.

1. *Necessity for Construction of the Permanent Barriers to Avoid a Violation*

According to revised Decision 1641, the permanent barriers are the primary means by which DWR and USBR can meet the water quality objectives in the long term. The barriers would help to improve water levels and circulation in southern Delta channels. (WR-5a, pp. 8-12, 86-89.) The agencies agreed that “salinity problems in the southern Delta can be mitigated using the barrier program.” (WR-5a, p. 87.) The State Water Board noted that: “The benefits of the barriers could be achieved by other means, such as increased flows through the Delta and export restrictions, but these measures could result in an unreasonable use of water and a significant reduction in water supplies south and west of the Delta.” (WR-5a, p. 10.) Although the State Water Board did not require the barriers to be constructed, it found that the barrier’s benefits were integral to the implementation of certain actions approved in the decision. (WR-5a, p. 10.) Consequently, revised Decision 1641 required DWR and USBR to take actions to achieve the benefits of the barriers. (WR-5a, pp. 88.)

DWR and USBR continue to identify the permanent barriers as the primary and preferred means of compliance with the 0.7 EC objective, noting that increased flows alone are unlikely to result in compliance. (WR-6, p. 2.) The agencies have explained that the State Water Board linked the effective date of the 0.7 EC objective to the expected completion date of the barriers “in recognition that . . . operations without the barriers could not, in many years, achieve the more stringent [0.7] objective.” (WR-6, p. 3.) Similarly, DWR has explained that “[a]t this time, the proposed [permanent barrier] appears

to be the *only feasible water management tool available* that will affect the interior channel water quality to achieve the Southern Delta objectives.” (WR-7, p. 2 [italics added].) Accordingly, construction and operation of the permanent barriers is the only practical and effective method of achieving the water quality objective. Each year that the permanent barriers are not installed is a year in which the agencies will threaten to violate the 0.7 EC objective at Interagency Station Nos. C-6, C-8, and P-12.

2. *Historical EC Data Indicates Future Violations are Likely*

DWR and USBR did not report any violations of the 0.7 EC objective in 2005. The absence of any reported violations apparently is because this year was unusually wet. The benefits of one wet year, however, will not necessarily carry over into the next water year, much less future years. DWR itself has acknowledged that salinity may exceed the 0.7 EC objective in wet years. (WR-7, p. 2.) Based on my review of historical EC data, there is no way anyone can assure that the water quality objective will not be exceeded in the next few years at any of the three compliance locations, regardless of the hydrologic conditions. In other words, a threat of violation of the 0.7 EC objective will continue regardless of water year type.

To evaluate the potential for USBR's and DWR's violation of the water quality objective in different hydrologic conditions, I looked at water quality data for the three southern Delta locations (Interagency Stations C-8, C-6, P-12) since 1996. Although data were available for earlier years, I chose 1996 as a starting point because that was the first year that all four temporary barriers were installed at the same time. I first attempted to obtain the water quality data online through the California Data Exchange Center (CDEC), but data were not available for Stations C-6 (Brandt Bridge) and P-12 (Old River at Tracy Road Bridge) prior to April 6, 2005. (WR-14.) I found in CDEC that the USBR operates Interagency Station No. C-8 and that DWR operates Interagency Station Nos. C-6 and P-12. I finally was able to obtain data directly from Tracy Hinojosa, Chief, Compliance and Modeling Section, Division of Operations and Maintenance, at DWR. (WR-8.) I only considered data from April 1 to August 31 of each year because that is all I needed to calculate the 30-day running average from April through August, when the 0.7 EC objective is effective. (Note 2 of Table 2 states that the averaging period begins on the first day of the time period for the applicable objective.) Using Excel, I prepared a line graph of the 30-day running average EC for each station and each year data were available from 1996 through 2005. The charts are attached as exhibits WR-11 to WR-13.

These charts reveal several facts. First, there are problems with data collection at the three stations. Exhibit WR-10 summarizes the days in which data are missing during the April 1 to August 31

compliance period. Each station has some data gaps, but data collection problems are particularly apparent at Interagency Station No. C-6 (Brandt Bridge) between 1998-2000 and at Interagency Station No. P-12 (Tracy Road Bridge), where no data were collected at all during April through August in 2004. As is discussed below in section II.E, DWR and USBR have failed to comply with the monitoring requirements of revised Decision 1641.

Second, the charts demonstrate that USBR and DWR historically have exceeded 0.7 EC at Interagency Station Nos. C-6, C-8 and P-12 even in wet years. (W-11 to WR-13.) A summary chart of days in which this value was exceeded between 1996 and 2005 is attached as exhibit WR-9. Several conclusions can be drawn from these charts: (1) EC values over 0.7 have occurred in wet years at all three locations; and (2) EC exceeded 0.7 at the three locations in a year (2001) immediately following a five-year period that included three wet and two above normal years.

Finally, actual violations of the water quality standards have occurred and gone unreported to the State Water Board. Before April 1, 2005, DWR and USBR were required to meet 1.0 EC at the three southern Delta locations (Interagency Station Nos. C-6, C-8, and P-12.) (WR-5b, note 5.) Data provided by DWR indicate the 1.0 30-day running average EC objective was exceeded at Station P-12 from about January 23, 2003 to April 21, 2003 and at Station C-6 from about January 28, 2003 to April 21, 2003. (WR-15.) These violations of the 1.0 standard in close proximity to April 1 (when the 0.7 EC standard now becomes effective), indicate that the agencies may have difficulty in attaining the 0.7 standard at those locations. In fact, at Station P-12 in 2003, the 30-day running average EC was not below 0.7 until about May 12.

Based on this information, I conclude that the agencies will continue to threaten to violate the terms of their water rights requiring compliance with the 0.7 EC objective regardless of water year hydrologic classification. Additionally, the longer the schedule to install the barriers slips, the greater the likelihood that the agencies will violate the water quality objective at Interagency Station Nos. C-8, C-6, and P-12.

D. Provisions of the Draft Cease and Desist Orders

The CDOs establish a schedule of compliance and impose reporting requirements on DWR and USBR so the State Water Board will be informed of DWR's and USBR's compliance with their permit terms and progress on constructing the permanent barriers or implementing equivalent measures. They do not impose any new or more stringent water quality standards than those already imposed by revised Decision 1641 and they do not alter any permit or license terms. (WR-3; WR-4.)

A schedule of compliance is necessary to avoid future delays in the construction of the permanent barriers or implementation of equivalent measures. USBR and DWR initially estimated in 1998 that they would complete the barriers by 2005. (WR-6, p. 5.) Now they claim that they need an additional three years—until 2008—to complete the barriers due to delays that were out of their control. (WR-6, p. 5.) If the agencies' best estimate of a 2005 completion date is off by at least three years, then there is little reason to expect that they will meet the current estimate of 2008.

A compliance schedule with State Water Board oversight is necessary to ensure that DWR and USBR diligently complete the barrier project or equivalent measures. Under the proposed compliance schedule, the permanent barriers must be installed and operational, or equivalent measures implemented, by January 1, 2009. (WR-3; WR-4.) This compliance schedule is based on DWR's and USBR's own estimated barrier completion date of December 31, 2008. (WR-6.) To ensure this schedule is met, the CDOs also require USBR and DWR to submit to the Chief of the Division of Water Rights a schedule for the barrier project that includes significant milestones and to submit project status updates every three months. It is necessary for the State Water Board to be informed and involved in the process to help ensure that the compliance schedule is met.

Additionally, the CDOs require notification to the State Water Board if DWR and USBR anticipate violation of the 0.7 EC standard, which is already required by Decision 1641. (WR-5b, p. 149, par. d.) Enforcement of this reporting requirement will allow the State Water Board to be informed and involved in the event a violation is anticipated.

Finally, the CDOs state that USBR and DWR are subject to a potential penalty of \$1,000 for each day the CDO is violated (not for each day the 0.7 EC standard is violated). Any future enforcement of the CDO would be subject to the State Water Board's discretion and consideration of all factors, such as whether or not the violation is within the control of USBR or DWR. The additional reporting required in the CDO would assist the State Water Board in making this judgment and in evaluating future enforcement actions.

E. Recommended Modifications to the Draft CDOs

In developing this testimony, I have concluded that the CDOs should be modified to ensure that DWR and USBR will comply with the monitoring and reporting terms of their water rights that were imposed, in part, to ensure compliance with the water quality objectives. Term 11 on page 149 of revised Decision

1641, establishes requirements for monitoring and reporting compliance with the water quality objectives. (WR-5a, p. 149.) Paragraph a of Term 11 requires water quality and baseline monitoring in accordance with Decision 1641, Table 5, which in turn requires continuous recording at compliance monitoring stations C-6, C-8, and P-12. (WR-5a, Table 5, p. 192.) The incomplete record of data collection certainly violates this term. (WR-8; WR-10.) Paragraph c of Term 11 requires that USBR and DWR make monitoring results publicly available and states that timely posting on the internet will suffice. CDEC data for Stations C-6 and P12, operated by DWR, are not currently available for any dates prior to April 6, 2005 and the data are not averaged. (WR-14.) Paragraph c of Term 11 also requires that USBR and DWR submit annual reports to the Executive Director of the State Water Board summarizing the previous calendar year's findings and detailing future study plans. I searched the Division's water right files where these reports should be located and could not find them. Paragraph d of Term 11 requires USBR and DWR to provide written notification to the Executive Director of the State Water Board of anticipated or actual violations discovered during the monitoring program. As of October 6, 2005, DWR had failed to provide notification of the violations that had occurred in 2003 at Interagency Station Nos. C-6 and P-12. USBR and DWR have failed to fully comply with these monitoring and reporting requirements imposed under Term 11 and, accordingly, the draft CDOs should be revised to compel their compliance.

Therefore, a final CDO 262.31-16, issued to the USBR, should include the following changes, shown in ~~strikeout~~/underline in exhibit WR-16:

1. A Term 5 should be added to page 4. This term should state, "If the ability to collect EC data at Interagency Stations Nos. C-8 or C-10 is lost for more than 7 consecutive days for any reason, this event should be reported in writing to the Executive Director. The report should include the reason for the loss of data, a plan to restore data collection and the anticipated date that data collection will resume."
2. A Term 6 should be added to page 4. This term should state, "The USBR shall timely submit the annual report required by Term 11, paragraph c, on page 149 of revised Decision 1641, beginning with the report required on December 1, 2005."

Finally, a final CDO 262.31-17, issued to the DWR, should include the following changes, shown in ~~strikeout~~/underline in exhibit WR-17:

1. Paragraphs 2 and 3 on page 2 should not include Interagency Station C-10 at Vernalis as a required compliance location. Again, these changes will correct a factual error.
2. A Term 5 should be added to page 4. This term should state, "If the ability to collect EC data at Interagency Station Nos. C-6 or P-12 is lost for more than 7 consecutive days for any reason, this event should be reported in writing to the Executive Director. The report should include the reason for the loss of data, a plan to restore data collection and the anticipated date that data collection will resume."
3. A Term 6 should be added to page 4. This term should state, "The DWR shall timely submit the annual report required by Term 11, paragraph c, on page 149 of revised Decision 1641, beginning with the report required by December 1, 2005. DWR shall make historical results of the monitoring required under this paragraph c available to the board and other interested parties on the internet. The data posted should include a computation of the 30-day running average."

III. Recommendation

In summary, the CDOs do not impose any new or more stringent water quality standards than those already imposed by revised Decision 1641. The permanent barrier completion date imposed by the CDOs is based on the completion date provided by USBR and DWR. If DWR and USBR comply with their water rights as already mandated by revised Decision 1641 they will not violate the CDOs. Without the CDOs, DWR and USBR are still subject to enforcement action if they violate the terms and conditions of their water rights. The additional emphasis on compliance provided by the CDOs will allow for more effective enforcement of requirements already in place and help to assure timely compliance in the future.

When revised Decision 1641 was issued in 2000, the permanent barrier completion was estimated five years in the future. DWR and USBR now envision completion an additional three years in the future. I believe past performance is a good indicator of future events. The CDOs set a standard for performance during what becomes in effect a probationary period while the barriers are completed. Whether or not project completion is completely under any agency's control is always subject to dispute; but a deadline imposed by the State Water Board in a water right decision needs to be meaningful. The pressure of a deadline creates action, but only if all the parties believe the deadline will be enforced. I recommend the State Water Board issue final Cease and Desist Orders Nos. 262.31-16 and 262.31-17 and include the modifications I have suggested.